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EXAMINER

MORRISON, THOMAS A

ART UNIT	PAPER NUMBER
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3653

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,110

Applicant(s)

YOUN, KARP-SIK

Examiner

Thomas A. Morrison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 16-31, 33, 34 and 36-38 is/are rejected.
- 7) ☐ Claim(s) 9-15, 32 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)

DETAILED ACTION

Claim Objections

1. Claims 27 and 30 are objected to because of the following informalities:
- (1) the recited "opening formed on the another contact surface" in line 2 of claim 27 should be -- opening formed through the another contact surface --; (2) the recited "shakes" in line 2 of claim 30 should be -- shake --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 33, 37 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 33, the recited "lever rotates with respect to the shaft" appears to be inaccurate. Rather, the lever appears to rotate together with the shaft.

Regarding claims 37 and 38, it is unclear what structure in each of these claims performs the picking up of the paper.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 4, 8, 16-19, 21-30, 33-34 and 36-38, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,382,621 (Innoue et al.).

Regarding claim 1, Figs. 8-10 show an apparatus for preventing paper double feeding in a paper feeding unit of a printer having a frame, a pickup roller (2) which picks up sheets of paper (S) stacked on a paper cassette (31) and transfers the paper (S) into the printer, and a plurality of paper guides (lower walls of each portion 38 on both sides of 37 in Fig. 8) which are installed at a front portion of the paper cassette (31) and guide the paper (S) transferred by the pickup roller (2), the apparatus including

a stripper (top wall portions of sections 38 on both sides of 37 in Fig. 8) which is installed to be inclined at a predetermined angle with respect to the paper stacked on the paper cassette (31), and attached to at least one front side of each of the paper guides (lower walls of each section 38 on both sides of 37 in Fig. 8);

a lever (37) which is installed at a side of the stripper and has a contact surface contacting the paper (S) transferred by the pickup roller (2); and

a lever shaking unit (including 10) which shakes the lever (37) to intermittently contact a side of the paper (S) transferred by the pickup roller (2); wherein a friction force is intermittently applied to the side of the paper (S) such that double feeding of the paper is prevented.

Regarding claim 2, Figs. 8 and 10 show that the stripper (including the top wall portions of sections 38 on both sides of 37 in Fig. 8) includes an opening groove formed on an upper portion of the stripper (including top wall portions of sections 38 on both sides of 37 in Fig. 8) such that the contact surface of the lever (37) contacts the side of the paper (S) through the opening groove.

Regarding claim 4, the stripper (including the top wall portions of sections 38 on both sides of 37 in Fig. 8) has a plurality of sub-strippers (each top wall portion of each section 38); and the lever (37) has a plurality of sub-levers (Fig. 8) having the same number as the sub-strippers.

Regarding claim 8, Fig. 9 shows a lever shaft (41) which is placed at the side of the stripper and rotatably installed on the frame of the printer, wherein the lever (37) is fixed on the lever shaft (41), and the lever shaking unit (including 10) shakes the lever shaft (41) so that the lever (37) is shaken.

Regarding claim 16, Figs. 8-10 disclose a method of preventing paper double feeding in a paper feeding unit of a printer when sheets of paper stacked on a paper cassette (31) are picked-up and transferred into the printer, the method including applying a first paper feeding resistance force (top wall portions of sections 38 in Fig. 8) to a first sheet of paper (S) which is picked-up by a pickup roller (2) and transferred along a paper path into the printer; and

intermittently applying a second paper feeding resistance force (via 37) to a side of one of the first sheet of paper (S) and a second sheet of paper (S) disposed under the first sheet of paper (S).

Regarding claim 17, Fig. 8 shows that the applying of the first paper feeding resistance force includes applying a resistance generated by a stripper (top wall portions of sections 38 on both sides of 37 in Fig. 8) which is installed to be inclined at a predetermined angle on the paper path.

Regarding claim 18, in order for the separation device of Innoue et al. to feed one sheet at a time, it is inherent that the first paper feeding resistance force is smaller than a first paper feeding force applied to the first sheet of paper by the pickup roller (2) and is larger than a paper feeding force applied to the second sheet of paper due to a friction force between the first and second sheets of paper.

Regarding claim 19, the second paper feeding resistance force (via 37) includes a friction force intermittently applied to the side of the second sheet of paper by a lever which is installed to be shaken on the paper path.

Regarding claim 21, Figs. 2 and 11-13 show an apparatus for preventing paper double feeding in a paper feeding unit of a printer having a frame, a pickup roller (2) which picks up paper stacked on a paper cassette (1) and transfers the paper into the printer, and a plurality of paper guides (lower wall portions of sections 11 on both sides of 8 in Fig. 2) which are installed at a portion of the paper cassette (1) and guide the

paper transferred by the pickup roller (2) in a paper feeding path, the apparatus including

a stripper (top wall portions of sections 11 on both sides of 8 in Fig. 2) disposed on the paper feeding path, fixedly installed on the frame to be inclined at a predetermined angle with respect to the paper stacked on the paper cassette (1), and contacting the paper transferred by the pickup roller (2) to apply a first paper feeding resistance force to the paper (S); and

a lever (8) disposed on the paper feeding path, movably installed on the frame, and having a contact surface contacting the paper (S) transferred by the pickup roller (2) to apply a second paper feeding resistance force to the paper (S).

Regarding claim 22, the paper (S) includes a first paper and a second paper, and the stripper (top wall portions of sections 11 on both sides of 8 in Fig. 2) applies the first paper feeding resistance force to the first paper while the contacting surface of the lever applies the second paper feeding resistance force to the second paper.

Regarding claim 23, the lever (8) selectively contacts the paper (S) while the stripper (top wall portions of sections 11 on both sides of 8 in Fig. 2) contacts the paper (S).

Regarding claim 24, the lever (8) intermittently applies the second paper feeding resistance force to the paper (S). This depends on the rotation angle of the cam (10).

Regarding claim 25, the lever (8) moves in a direction between a first position to allow the contact surface to contact the paper and a second position to allow the contact surface to be moved away from the paper passing the stripper.

Regarding claim 26, in as much as the lever of the instant application rotates in a direction perpendicular to the paper feeding direction, the lever (8) of Innoue et al. also meets this limitation.

Regarding claim 27, Fig. 2 shows that the stripper (top wall portions of sections 11 on both sides of 8 in Fig. 2) includes another contact surface (lower wall portions of sections 11 on both sides of 8 in Fig. 2) contacting the paper (S) and an opening formed on the another contact surface, and the contact surface of the lever (8) is disposed on the opening of the another contact surface of the stripper.

Regarding claim 28, the contact surface of the lever (8) contacts the paper through the opening. See, e.g., Fig. 2

Regarding claim 29, the paper (S) includes a first paper and a second paper, the first paper and the second paper generate a friction force between the first paper and the second paper, and the second paper feeding resistance force is equal to or greater than the friction force.

Regarding claim 30, Figs. 11-13 show a lever shaking unit (including 10) mounted on the frame to shakes the lever (8) to intermittently contact the paper (S) transferred by the pickup roller (2).

Regarding claim 33, Fig. 11 shows a shaft (not numbered) that is parallel to a width direction of the paper (S) perpendicular to the paper feeding direction. In as much as the lever of the instant application rotates with respect to a shaft, so does the lever (8) of Innoue et al.

Regarding claim 34, the lever shaking unit (including 10) has a shaft (not numbered) connected to the lever (8); and a motor (column 5, lines 44-46) controlling the shaft to rotate together with the lever (8) about an axis disposed on one of the lever (8) and the shaft. In particular, a motor operates a cam (10), which controls the shaft to rotate together with the lever (8). This meets the limitations of claim 34.

Regarding claim 36, Figs. 2 and 12 show an apparatus for preventing paper double feeding in a paper feeding unit of a printer having a frame, a pickup roller (2) which picks up paper (S) stacked on a paper cassette (1) and transfers the paper into the printer, and a plurality of paper guides (one guide 11 on each side of element 8 in Fig. 2) which are installed at a portion of the paper cassette and guide the paper transferred by the pickup roller (2) in a paper feeding path, the apparatus including

a stripper (41) fixedly disposed on the paper feeding path to apply a first paper feeding resistance force to the paper (S) fed by the pickup roller (2);

a lever (8) movably disposed on the paper feeding path to selectively apply a second paper feeding resistance force to the paper (S) fed by the pickup roller (2); and

a power source (column 5, lines 44-46) controlling the lever (8) to selectively move with respect to the paper (S) fed by the pickup roller (2) to contact the paper (S).

Regarding claim 37, Figs. 1-5 show an apparatus for picking up sheets of paper (S) in a printer, including

a lever (8) intermittently applying a friction force to a rear side (Figs. 4-5) of the picked-up paper to prevent the paper (S) from not being picked-up and double feeding of the paper (S).

Regarding claim 38, Figs. 1-5 show a method of picking up sheets of paper (S) in a printer, the method including

intermittently applying a friction force (via 8) to a rear side (Figs. 4-5) of the picked-up paper (S) to prevent the paper from not being picked-up and double feeding of the paper (S).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Innoue et al.

Regarding claim 3, Innoue et al. discloses a lever (8) that is shaken so that the contact surface periodically contacts the paper while a front end of the paper passes the contact surface, but does not specifically indicate that the contact surface contacts the

paper at least three times. The number of times that the lever (8) contacts the paper is an obvious design choice within the skill of one of ordinary skill in the art.

Regarding claims 5, applying the friction force intermittently to the side of the paper (S) by the lever (37) such that it is larger than a resistance applied to the paper by the stripper is merely a matter of design choice within the skill of one of ordinary skill in the art.

Regarding claim 20, applying a second paper feeding resistance force that is larger than the first paper feeding resistance force is merely a matter of design choice within the skill of one of ordinary skill in the art.

5. Claims 6, 7 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Innoue et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,443,251 (Kan et al.). In particular, Innoue et al. in view of Kan et al. meets all of the limitations of claim 6.

Regarding claim 6, Innoue et al. shows a lever (37) with a contact surface, but does not specifically show that the contact surface includes a friction pad.

Figs. 27-29 of Kan et al. show that it is well known to provide a friction pad (57) attached to a cam operated lever (57b) to prevent double feeding of sheets. See column 20, lines 51-54. It would have been obvious to one of ordinary skill in the art at the time of the invention, to provide the lever (37) of Innoue et al. with a friction pad (57), to prevent double feeding of sheets, as taught by Kan et al.

Regarding claim 7, Kan et al. disclose that the friction pad (57) is formed of a rubber material. See column 14, lines 5-11.

Regarding claim 31, Innoue et al. shows a lever shaking unit (including 10) that is operated by the rotation of a cam (10), which moves the lever (8) in a in a second direction to selectively allow the contact surface to contact the paper. The cam (10) is inherently moved by a motor. However, Innoue et al. does not specifically show that the the lever shaking unit (including 10) has a resilient member.

Fig. 28A of Kan et al. shows that it is well known to provide a biasing member for biasing the lever in a first direction onto an outer surface of a rotating cam, e.g., in order to ensure that the lever accurately follows the contour of the outer surface of the cam. It would have been obvious to one of ordinary skill in the art at the time of the invention, to provide the lever shaking unit (including 10) of Innoue et al. with a biasing member in order to ensure that the lever accurately follows the contour of the outer surface of the cam, as shown in Kan et al.

Allowable Subject Matter

6. Claims 9-15, 32 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Walsh can be reached on (571) 272-6944. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).